

ABSTRACT OF THE DISCLOSURE

Bistable molecules are provided with at least one photosensitive functional group. As thus constituted, the bistable molecules are photopatternable, thereby allowing
5 fabrication of micrometer-scale and nanometer-scale circuits in discrete areas without
relying on a top conductor as a mask. The bistable molecules may comprise molecules
that undergo redox reactions, such as rotaxanes and catenanes, or may comprise mole-
cules that undergo an electric-field-induced band gap change that causes the molecules,
or a portion thereof, to rotate, bend, twist, or otherwise change from a substantially fully
10 conjugated state to a less conjugated state. The change in states in the latter case results
in a change in electrical conductivity.